REPORT DOCUMENTATION PAGE

Form Approved OMB NO. 0704-0188

1. REPORT DATE (DD-MM-YYYY)	2. REPORT TYPE	3. DATES COVERED (From - To)
18-11-2015	Final Report	22-Jul-2013 - 21-Sep-2014

4. TITLE AND SUBTITLE
Final Report: Molecular Genetic Equipment for Improved Inventory and Monitoring of Species of Conservation Concern on Department of Defense Lands

5a. CONTRACT NUMBER
W911NF-13-1-0266

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER
611103

6. AUTHORS
Dr. Lisette P. Waits, Dr. Caren S. Goldberg, Dr. Jennifer R. Adams

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAMES AND ADDRESSES
University of Idaho
875 Perimeter Dr, MS 3020

Moscow, ID 83844 -3020

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS (ES)
U.S. Army Research Office
P.O. Box 12211
Research Triangle Park, NC 27709-2211

10. SPONSOR/MONITOR'S ACRONYM(S)
ARO

11. SPONSOR/MONITOR'S REPORT NUMBER(S)
63456-LS-RIP.8

12. DISTRIBUTION AVAILIBILITY STATEMENT
Approved for Public Release; Distribution Unlimited

13. SUPPLEMENTARY NOTES
The views, opinions and/or findings contained in this report are those of the author(s) and should not contrued as an official Department of the Army position, policy or decision, unless so designated by other documentation.

14. ABSTRACT
The Laboratory for Ecological, Evolutionary and Conservation Genetics in the College of Natural Resources at the University of Idaho was tasked with designing methods to monitor species of concern on DoD lands as part of four DoD grants. With the funds granted we were able to 1) upgrade our computing lab with new computers and versions of software and 2) expand the capacity of the lab for a higher throughput of samples. Areas of expanded capacity and throughput include DNA extraction and sample tracking (extraction robot, centrifuges, barcoding equipment), DNA amplification and quantification (standard and quantitative PCR machines), sample storage

15. SUBJECT TERMS
Final Report

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	15. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Lisette Waits
UU	UU	UU	UU		19b. TELEPHONE NUMBER: 208-885-7823

Report Title

Final Report: Molecular Genetic Equipment for Improved Inventory and Monitoring of Species of Conservation Concern on Department of Defense Lands

ABSTRACT

The Laboratory for Ecological, Evolutionary and Conservation Genetics in the College of Natural Resources at the University of Idaho was tasked with designing methods to monitor species of concern on DoD lands as part of four DoD grants. With the funds granted we were able to 1) upgrade our computing lab with new computers and versions of software and 2) expand the capacity of the lab for a higher throughput of samples. Areas of expanded capacity and throughput include DNA extraction and sample tracking (extraction robot, centrifuges, barcoding equipment), DNA amplification and quantification (standard and quantitative PCR machines), sample storage (refrigerators and freezers). This expanded capacity has allowed for the analysis of over 5000 fecal samples from terrestrial vertebrate species and over 1400 environmental DNA from aquatic vertebrate species. The equipment purchases resulted in the acquisition of new skills for 19 laboratory personnel and the analyses of data generated from the new equipment led to seven peer reviewed publications and 19 meeting presentations.

Enter List of papers submitted or published that acknowledge ARO support from the start of the project to the date of this printing. List the papers, including journal references, in the following categories:

(a) Papers published in peer-reviewed journals (N/A for none)

Received		Paper
10/20/2015	1.00	Robert C. Lonsinger, Eric M. Gese, Steven J. Dempsey, Bryan M. Kluever, Timothy R. Johnson, Lisette P. Waits. Balancing sample accumulation and DNA degradation rates to optimize noninvasive genetic sampling of sympatric carnivores, Molecular Ecology Resources, (07 2015): 1. doi: 10.1111/1755-0998.12356
10/20/2015	2.00	Susannah P. Woodruff, Jennifer R. Adams, Timothy R. Johnson, Lisette P. Waits. Rapid species identification of Sonoran pronghorn from fecal pellet DNA, Wildlife Society Bulletin, (12 2014): 842. doi: 10.1002/wsb.477
10/20/2015	3.00	Steven J. Dempsey, Eric M. Gese, Bryan M. Kluever, Robert C. Lonsinger, Lisette P. Waits, Jesus E. Maldonado. Evaluation of Scat Deposition Transects versus Radio Telemetry for Developing a Species Distribution Model for a Rare Desert Carnivore, the Kit Fox, PLoS ONE, (10 2015): 0. doi: 10.1371/journal.pone.0138995
10/20/2015	4.00	Caren S. Goldberg, Katherine M. Strickler, David S. Pilliod. Moving environmental DNA methods from concept to practice for monitoring aquatic macroorganisms, Biological Conservation, (03 2015): 1. doi: 10.1016/j.biocon.2014.11.040
10/20/2015	5.00	Robert C. Lonsinger, Eric M. Gese, Lisette P. Waits. Evaluating the reliability of field identification and morphometric classifications for carnivore scats confirmed with genetic analysis, Wildlife Society Bulletin, (09 2015): 593. doi: 10.1002/wsb.549
10/20/2015	6.00	S. P. Woodruff, T. R. Johnson, L. P. Waits. Evaluating the interaction of faecal pellet deposition rates and DNA degradation rates to optimize sampling design for DNA-based mark-recapture analysis of Sonoran pronghorn, Molecular Ecology Resources, (07 2015): 843. doi: 10.1111/1755-0998.12362
10/20/2015	7.00	Katherine M. Strickler, Alexander K. Fremier, Caren S. Goldberg. Quantifying effects of UV-B, temperature, and pH on eDNA degradation in aquatic microcosms, Biological Conservation, (03 2015): 85. doi: 10.1016/j.biocon.2014.11.038
TOTAL:	**7**	

Number of Papers published in peer-reviewed journals:

(b) Papers published in non-peer-reviewed journals (N/A for none)

Received	Paper

TOTAL:

Number of Papers published in non peer-reviewed journals:

(c) Presentations

Fremier, A. K., C. S. Goldberg, K. M. Strickler (2014, November) Environmental DNA as a tool for inventory and monitoring of aquatic vertebrates. Department of Defense SEDRP and ESTCP Joint annual Fall In-Progress Review, Arlington, VA.
Waits, L. P., R. Lonsinger, S. P. Woodruff (2014, November) Monitoring species of concern using noninvasive genetic sampling and capture-recapture. Department of Defense SEDRP and ESTCP Joint annual Fall In-Progress Review, Arlington, VA.
Strickler, K. M., C. S. Goldberg, and A. K. Fremier (2014, August). Environmental DNA sampling strategies in lentic and lotic systems. American Fisheries Society Annual Meeting, Quebec City, Quebec, Canada. Invited talk.
Goldberg, C. S., J. Brunner, E. Hall, K. M. Strickler, A. K. Fremier, and E. Crespi (2014, July). Simultaneous detection of amphibian pathogens and their vertebrate hosts in aquatic systems. North American Congress for Conservation Biology, Missoula, MT. Invited talk.
Waits, L. P., S. P. Woodruff, R. Lonsinger (2014, July). Designing effective noninvasive genetic sampling approaches for monitoring wildlife populations. North American Congress for Conservation Biology Annual Meeting, Missoula, MT.
Woodruff, S. P., P. Lukacs, L. P. Waits (2014, July). Simultaneous demographic monitoring of predator and prey population sizes using fecal DNA sampling. North American Congress for Conservation Biology, Missoula, MT.
Fremier, A. K. , K. M. Strickler, and C. S. Goldberg (2014, June). Using environmental DNA in monitoring programs for fish and amphibians. Yakima Basin Science & Management Conference, Ellensburg, WA.
Goldberg, C. S., K. M. Strickler, and A. K. Fremier (2014, May) Modeling environmental DNA detection of aquatic species across systems. Joint Aquatic Sciences Meeting, Portland, OR. Invited talk.
Byerly, P., R. Lonsinger, L. P. Waits (2014, March). Resource partitioning between sympatric carnivores: a comparison of historic and contemporary dietary overlap. Idaho Chapter of the Wildlife Society, Boise, ID.
Woodruff, S. P., T. R. Johnson, L. P. Waits (2014, March) Preliminary results of non-invasive genetic sampling for mark-recapture studies of endangered Sonoran pronghorn. Idaho Chapter of the Wildlife Society, Annual Meeting, Boise, ID.
Strickler, K. M., Goldberg, C. S., and A. K. Fremier (2014, March). Monitoring aquatic amphibian and reptile populations using environmental DNA. National Military Fish and Wildlife Association, Denver, CO.
Lonsinger, R. (2014, April). Conservation genetics: using noninvasive genetic sampling to investigate two sympatric Ccrnivores. Integrated Natural Resource Management Annual Meeting, Salt Lake City, UT. Invited talk.
Goldberg, C. S. (2014, February). Detection of stream species using environmental DNA: spatial and temporal inference. Society for Northwestern Vertebrate Biology, Pasco WA. Invited talk.
Lonsinger, R., E. Gese, L. P. Waits (2014, January). Balancing scat deposition and fecal DNA degradation rates to optimize concurrent noninvasive genetic sampling of intraguild predator and prey species. Gordon Research Conference on Predator-Prey Interactions, Ventura, CA.
Woodruff, S. P., L. P. Waits (2014) Preliminary results of non-invasive genetic sampling for mark-recapture studies of endangered Sonoran pronghorn and coyotes with Sonoran pronghorn range. Collaborator meeting, Cabeza Prieta National Wildlife Refuge, Ajo, AZ.
Fremier, A. K., C. S. Goldberg, K. M. Strickler (2013, November) Environmental DNA as a tool for inventory and monitoring of aquatic vertebrates. Department of Defense SEDRP and ESTCP Joint annual Fall In-Progress Review, Arlington, VA.
Waits, L. P., R. Lonsinger (2013, November). Monitoring Species of Concern Using Noninvasive Genetic Sampling and Capture-Recapture. Department of Defense SEDRP and ESTCP Joint annual Fall In-Progress Review, Arlington, VA.
Lonsinger, R., E. Gese, L. P. Waits (2013, October). Balancing scat deposition and fecal DNA degradation rates to optimize noninvasive genetic sampling of carnivores. The Wildlife Society Annual Meeting, Milwaukee, WI.
Goldberg, C. S., K. Strickler, A. Fremier, L. P. Waits (2013, September). Factors affecting detection probability of fishes and amphibians using environmental DNA sampling. American Fisheries Society, Little Rock, AR. Invited talk.

Number of Presentations: 19.00

Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Peer-Reviewed Conference Proceeding publications (other than abstracts):

(d) Manuscripts

Received Paper

TOTAL:

Number of Manuscripts:

Books

Received Book

TOTAL:

Received Book Chapter

TOTAL:

Patents Submitted

Patents Awarded

Awards

Graduate Students

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Post Doctorates

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Faculty Supported

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Under Graduate students supported

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Student Metrics

This section only applies to graduating undergraduates supported by this agreement in this reporting period

The number of undergraduates funded by this agreement who graduated during this period: 0.00

The number of undergraduates funded by this agreement who graduated during this period with a degree in science, mathematics, engineering, or technology fields:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and will continue to pursue a graduate or Ph.D. degree in science, mathematics, engineering, or technology fields:..... 0.00

Number of graduating undergraduates who achieved a 3.5 GPA to 4.0 (4.0 max scale):..... 0.00

Number of graduating undergraduates funded by a DoD funded Center of Excellence grant for Education, Research and Engineering:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and intend to work for the Department of Defense 0.00

The number of undergraduates funded by your agreement who graduated during this period and will receive scholarships or fellowships for further studies in science, mathematics, engineering or technology fields: 0.00

Names of Personnel receiving masters degrees

NAME

Total Number:

Names of personnel receiving PHDs

NAME

Total Number:

Names of other research staff

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Sub Contractors (DD882)

Inventions (DD882)

Scientific Progress

See attached.

Technology Transfer

Our research group has been developing methods for effectively implementing noninvasive genetic sampling (NGS) and environmental DNA (eDNA) techniques for managing biological resources on DoD lands through four DoD grants. This equipment grant provided funding to enhance and expand the equipment for NGS and eDNA analyses at our molecular genetics core facility, the Laboratory for Ecological, Evolutionary and Conservation Genetics in the College of Natural Resources at the University of Idaho. The facility contains equipment for DNA extraction and amplification using traditional and quantitative PCR methods plus DNA sequencing and fragment analysis using capillary electrophoresis. This grant provided equipment to 1) augment our current research capacity by expanding our ability to process large numbers of samples quickly and accurately and 2) position us to adapt and develop new research capabilities as they apply to DoD resource management challenges. The purchased equipment will also provide new opportunities for undergraduate and graduate student training in this research area.

This equipment was used to process over 5000 fecal DNA samples for terrestrial vertebrate species on DoD and adjacent lands for genetic monitoring of kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), and Sonoran pronghorn (*Antilocapra americana sonoriensis)*. Additionally, equipment was used to analyze over 1400 eDNA samples for the presence of at-risk fish, amphibians and an aquatic reptile (*Thamnophis equus*).

The purchase of this equipment providing training for two Ph.D. graduate students, 12 undergraduate students, 1 research scientist and 6 laboratory technicians. The application of methods using this equipment has resulted in 7 publications, 19 meeting presentations, 7 presentations to DoD staff, and webinars in the SERDP/ESTCP series, DoD PARC series, and USGS eDNA series since funding was received in 2013.

Table 1. Manufacturer, model and purchase price of all equipment purchased.

Equipment Item	Manufacturer	Model	Amount
96 Well Quantitative PCR Machine	Applied Biosystems	QuantStudio 7 Flex	44648.78
Data Analysis Software Upgrade and Rewire Computer Lab	Applied Biosystems	Genemapper 5.0 Sequence Analysis 6.0	8962.00
Computer Lab Capacity and Data Analysis Upgrade	GeneCodes Corporation Dell	Sequencher 5.0 Optiplex 9020	15094.21
Thermalcycler System	Bio-Rad	C1000 Touch (2) S1000 (4)	27970.00
Centrifuge System	Eppendorf Labnet	5430R Hermle Z400	15572.50
DNA Quantification and Sterilization	Invitrogen Bioclave	Qubit 2.0 16 liter	5549.76
Barcoding Sample Labeling	Brady	BP-1P600	6357.95

System			
Sample Storage System Refrigerator and Freezers	American Biotech Supply ZSC1 Biomedical So-Low Kenmore Phenix Freezer Racks	TempTech 2000 DF-8524 FU85-22 20.2 cu. ft. Freezer Box	34009.65
DNA Extraction Robot	Qiagen, Inc	QiaCube	11349.15

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 | 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
P00001	22-Jul-2014	0010377027	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
US ARMY ACC-APG-RTP W911NF 4300 S. MIAMI BLVD DURHAM NC 27703	W911NF	ONRRO SEATTLE 300 FIFTH AVENUE, SUITE 710 SEATTLE WA 98104	N63374

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
REGENTS OF THE UNIVERSITY OF IDAHO 875 PERIMETER DRIVE MOSCOW ID 83844-9803		9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
	X	10A. MOD. OF CONTRACT/ORDER NO. W911NF-13-1-0266
	X	10B. DATED (SEE ITEM 13) 22-Jul-2013
CODE 4B807	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer ☐ is extended, ☐ is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

☐ A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

☐ B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

☐ C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

X D. OTHER (Specify type of modification and authority)
Unilateral: IAW e-mail request dated 10 July 2014

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
Modification Control Number: ashep142664

ARO Proposal No. 63456-LS-RIP Principal Investigator: Dr. Lisette Waits ARO GOR: Dr. Kelby Kizer

A. The purpose of this modification is to extend the period of performance at no additional cost to the Government and approve the purchase of additional equipment as requested in letter dated July 9, 2014.

B. The Period of Performance is changed FROM: 22 July 2013 - 21 July 2014 TO: 22 July 2013 - 21 September 2014.

C. All other grant terms and conditions remain unchanged.

Please disregard Page 2 which is not applicable.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) SUSAN P. HILL / GRANTS/CONTRACTING OFFICER TEL: 919-549-4338 EMAIL: susan.p.hill.civ@mail.mil	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY Susan P. Hill (Signature of Contracting Officer)	16C. DATE SIGNED 22-Jul-2014

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION F - DELIVERIES OR PERFORMANCE

The following Delivery Schedule item for CLIN 0001 has been changed from:

DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
POP 22-JUL-2013 TO 21-JUL-2014	N/A	TRANSPORTATION OFFICE - W36QYT PR PROP BK ACCT DURHAM PO BOX 12211 RESEARCH TRIANGLE PARK NC 27709-2211 FOB: Destination	W36QYT

To:

DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
POP 22-JUL-2013 TO 21-SEP-2014	N/A	TRANSPORTATION OFFICE - W36QYT PR PROP BK ACCT DURHAM PO BOX 12211 RESEARCH TRIANGLE PARK NC 27709-2211 FOB: Destination	W36QYT

(End of Summary of Changes)

University of Idaho

Office of Sponsored Programs

875 Perimeter Drive MS 3020
Moscow, ID 83844–3020

Phone: 208-885-6651
Fax: 208-885-5752
osp@uidaho.edu
www.uidaho.edu/osp

Dr. Kelby Kizer
Program Manager
DURIP Program
Kelby.o.kizer.civ@mail.mil
919-549-4210

July 9, 2014

Dear Dr. Kizer:

The University of Idaho requests permission to utilize cost savings on the DURIP grant W911NF-13-1-0266 (UI # GWK399) to purchase the attached equipment and, if granted, an extension of time to allow for the purchase of this equipment. We have been able to get good discounts on our equipment by purchasing multiple items from the same vendors and using special promotions, which has generated ~$18,000 in savings compared to the original budget. We have been considering other equipment that would assist in our goals to improve the efficiency and cost-effectiveness of processing genetic samples for the DoD monitoring that we are currently conducting.

We would like to request permission to purchase a Qiagen Qiacube (catalogue #9001292). This is a robotic workstation that automates the extraction and purification of DNA from our two main genetic monitoring sources (scat and hair). A single unit extracts 12 samples in a two hour period so approximately 48 per 8 hour work day (for more details see http://www.qiagen.com/products/catalog/automated-solutions/sample-prep/qiacube#productdetails). Currently DNA extraction is the bottleneck in our sampling processing, and we hire extra technicians to process large volumes of samples. This unit would increase the DNA extraction throughput while decreasing technician time. We currently use all Qiagen products for manual DNA extraction so this DNA extraction robot is the only automated extraction equipment compatible with our current protocols.

The termination date of our grant is July 21, 2014 so we would like to find out as soon as possible if you will approve this additional purchase with the remaining funds and if so, we request a no cost extension to the date of September 15, 2014 to complete the purchase of the equipment.

A quote is attached for approximately $21,000. The cost that is above the remaining grant funds will be leveraged with other non-federal funds.

Thank for you for your time and assistance. Please direct questions to postaward@uidaho.edu or 208-885-2145 (Sarah Martonick, Post Award Manager).

Sincerely,

Lisette Waits
Principal Investigator

Polly Knutson
Director of Research Administration
SM 7/10/14

CC: Susan P. Hill, Contracting/Grants Officer: susan.p.hill.civ@mail.mil.

July 9, 2014

Jennifer Adams
University of Idaho
Unknown
Moscow, ID 83843

RE: QIAGEN Agreement # SL07092014A

Dear Jennifer Adams,

Thank you for your interest in QIAGEN solutions. I have enclosed the quotation you requested. Please note that the terms and conditions, including shipping, are located at the bottom of the attached agreement form. When placing an order, please reference the Agreement Number located at the top of the form to ensure accurate pricing and shipping.

Thank you for considering QIAGEN products. If you have any questions, please call me at 1-800-426-8157.

Sincerely,

Savannah Liu
Inside Sales Representative

QIAGEN - Sample & Assay Technologies

QIAGEN Agreement # SL07092014A

Jennifer Adams
University of Idaho
Unknown
Moscow, ID 83843
Phone: +1 (208) 885-8914
Email: adamsj@uidaho.edu

July 9, 2014

Offer valid until 7/31/2014.
Agreement valid 7/9/2014 to 7/31/2014.
Quote valid for Only the sold-to accounts listed.

Catalog #	Product	Your Price	Qty	Ext. Price
9001292	QIAcube (110V)	9,417.15	2	18,834.30
9240377	QIAcube, Installation	1,832.00	1	1,832.00
Total			**$**	**20,666.30**

Shipping Method:
Shipping Charge: FOB Destination, Free shipping

49% off list price for QIAcube demonstration units

This Quote shall be governed by the QIAGEN Standard Terms and Conditions available at http://www.qiagen.com/products/ordering-information/Ordering-terms-USA/

Please use the agreement number shown above when placing your order. All of your orders are covered by our Satisfaction Guarantee. All list prices are subject to change without notice.

Savannah Liu
1-800-426-8157
Inside Sales Representative

To place order by phone: 800-426-8157
On-line: www.qiagen.com
Fax: 800-718-2056
Mail: QIAGEN Inc.
27220 Turnberry Lane, Suite 200
Valencia, CA 91355-1005

QIAGEN - Sample & Assay Technologies